WHAT IS CLAIMED IS:

1. A stent for implanting in the body to hold open a blood vessel, comprising:

a. a body-compatible metal mesh defining a tube having adjacent contiguous cells, the cells having walls which are also the walls of adjacent cells, each of the plurality of cells including a pair of facing loops, each facing loop having a curved apex generally aligned along the longitudinal axis, and each facing loop having a first end and a second end that are generally aligned along the circumferential axis, each of the facing loops adapted to open further upon radial expansion of the stent which tends to foreshorten the stent longitudinally,

b. each of the plurality of cells further including a pair of curved flexible links which connect the adjacent ends of the pair of facing loops to complete each of the plurality of cells, the pair of curved flexible links made of a metal which, upon expansion of the stent, bend to substantially offset foreshortening along the longitudinal axis, and

c. said pair of facing loops and said curved flexible links disposed and adapted to cooperate so that the tube, when unexpended, can flex as it is moved through curved blood vessels to a site where it is to be expanded and so that, when the stent is expanded in a curved vessel, at that site, as compared to each other, cells on the outside of the curve are open in length, but narrow in width as compared to cells on the inside of the curve which are short in length but increased in width.

2. A stent according to claim 1 wherein on the outside of the curve, the curved flexible links are open and the facing loops are closed as compared to the inside of the curve, where the flexible links are closed and the facing loops are open.

3. A stent according to claim 1 wherein compensation, which occurs when cells on the outside of the curve are open in length, but narrower in width as compared to cells on the inside

of the curve, which are shorter in length but increased in width, results in a more constant density of stent element area between the inside and the outside of the curve than would otherwise occur.

4. A stent according to claim 1 wherein compensation, which occurs when cells on the outside of the curve are open in length, but narrower in width as compared to cells on the inside of the curve, which are shorter in length but increased in width, results in a more constant stent cell area between the inside and the outside of the curve than would otherwise occur.

5. A stent according to claim 3 wherein said stent is coated with a medicine and said compensation results in a more even dose being applied to the inside wall of the lumen, avoiding the possibility that a toxic dose is supplied at one area while a less than effective dose is applied to another area

6. A stent according to claim 4 wherein said stent is coated with a medicine and said compensation results in a more even dose being applied to the inside wall of the lumen, avoiding the possibility that a toxic dose is supplied at one area while a less than effective dose is applied to another area

7. The stent of claim 1, positioned on a balloon which upon expansion causes the stent to expand to hold open the blood vessel.

8. The expanded stent of claim 1, in which the expanded stent has approximately the same longitudinal length as the stent had prior to expansion.

9. A balloon-expandable stent defining a longitudinal aperture, said stent consisting essentially of:

a. a plurality of flexible connected cells, each of said flexible cells comprising:

i. a first member having a longitudinal component having a first end and a second end;

ii. a second member having a longitudinal component having a first end and

iii. a third member having a longitudinal component having a first end and a second end;

iv. a fourth member having a longitudinal component having a first end and a second end;

v. a first loop defining a first angle disposed between said first end of said first member and said first end of said second member;

vi. a second loop defining a second angle disposed between said second end of said third member and said second end of said fourth member, and disposed generally opposite to said first loop so that said first angle and said second angle open toward each other;

vii. a first flexible compensating member having a first end and a second end disposed between said first member and said third member, said first end of said first flexible compensating member communicating with said second end of said first member and said second end of said first flexible compensating member communicating with said first end of said third member, said first and said second ends disposed a variable longitudinal distance from each other;

viii. a second flexible compensating member having a first end and a second end disposed between said second member and said fourth member, said first end of said second flexible compensating member communicating with said second end of said second member and said second end of said second flexible compensating member communicating with said first end of said fourth member, said first and said second ends disposed a variable

longitudinal distance from each other, said first and said second flexible compensating member differentially extendable or compressible when said stent is bent in a curved direction away from the longitudinal axis of said aperture; and

ix. said first, said second, said third, and said fourth members and said first and said second loops, and said first and said second flexible compensating member disposed so that as said stent is balloon-expanded from a delivery diameter to a deployment diameter the distance between said first and said second flexible compensating member increases and the longitudinal component of said first, second, third and fourth members decreases while said first and said second loops remain generally opposite to one another, the ends of said first and said second flexible compensating member open so as to increase said variable longitudinal distance between said first and said second ends of said first flexible compensating member and so as to increase said variable longitudinal distance between said first and said second ends of said second flexible compensating member so as to compensate for the decreasing of the longitudinal component of said first, second, third, and fourth members and substantially lessen the foreshortening of said stent upon its expansion; and

b. said first and second loops and said flexible compensating member disposed and adapted to cooperate so that the tube, when unexpended, can flex as it is moved through curved blood vessels to a site where it is to be expanded and so that, when the stent is expanded in a curved vessel, at that site, as compared to each other, cells on the outside of the curve are open in length, but narrow in width as compared to cells on the inside of the curve which are short in length but increased in width.

10. A stent according to claim 9 wherein on the outside of the curve, the flexible compensating members open up and the first and second loops close down, and on the inside of

the curve, the flexible compensating members close down and the first and second loops open up.

11. A stent according to claim 9 wherein compensation, which occurs when cells on the outside of the curve open in length, but narrow in width and cells on the inside of the curve shorten in length but thicken in width, results in a more constant density of stent element area between the inside and the outside of the curve than would otherwise occur.

12. A stent according to claim 9 wherein compensation, which occurs when cells on the outside of the curve open in length, but narrow in width and cells on the inside of the curve shorten in length but thicken in width, results in a more constant stent cell area between the inside and the outside of the curve than would otherwise occur.

13. A stent according to claim 12 wherein said stent is coated with a medicine and said compensation results in a more even dose being applied to the inside wall of the lumen, avoiding the possibility that a toxic dose is supplied at one area while a less than effective dose is applied to another area.

14. A stent according to claim 11 wherein said stent is coated with a medicine and said compensation results in a more even dose being applied to the inside wall of the lumen, avoiding the possibility that a toxic dose is supplied at one area while a less than effective dose is applied to another area.

15. A balloon-expandable stent, consisting substantially of:

a. flexible cells disposed about the circumference of the stent, each of said cells having a first longitudinal end and a second longitudinal end and an upper end and a lower end, each of said cells consisting essentially of:

i. a first pair of members connected by an area of inflection generally disposed at said first longitudinal end of each of said cells;

ii. a second pair of members connected by an area of inflection generally disposed at said second longitudinal end of each of said cells; and

iii. a first flexible compensating member disposed between said first and second pair of members at said upper end of each of said cells;

iv. a second flexible compensating member disposed between said first and second pair of members at said lower end of each of said cells;

b. wherein upon bending of the stent the flexible compensating members on the outside of the bend lengthen in the longitudinal direction and the flexible compensating members on the inside of the bend shorten in the longitudinal direction;

c. wherein upon expansion of the stent by a balloon from a delivery diameter to a deployment diameter, the flexible compensating members lengthen in the longitudinal direction to compensate for the tendency of the stent to foreshorten; and

d. wherein, when the expanded stent is in a curved lumen, on the outside of the bend, the first and second pairs of members come closer together in the circumferential direction, as compared to the inside of the bend, where the first and second pairs of members separate in the circumferential direction.

16. A stent according to claim 15 wherein compensation which occurs when the first and second pairs of members come closer together in the circumferential direction on the outside and the first and second pairs of members separate in the circumferential direction on the inside compensates respectively for the shortening and lengthening of the flexible compensating members to result in a more constant density of stent element area between the inside and the outside of the curve than would otherwise occur.

17. A stent according to claim 15 wherein compensation which occurs when the first and second pairs of members come closer together in the circumferential direction on the outside and the first and second pairs of members separate in the circumferential direction on the inside

compensates respectively for the shortening and lengthening of the flexible compensating members to result in a more constant stent cell area between the inside and the outside of the curve than would otherwise occur.

18. A stent according to claim 16 wherein said stent is coated with a medicine and said more constant density of stent elements results in a more even dose being applied to the inside wall of the lumen, avoiding the possibility that a toxic dose is supplied at one area while a less than effective dose is applied to another area

19. A stent according to claim 17 wherein said stent is coated with a medicine and said more constant density of stent elements results in a more even dose being applied to the inside wall of the lumen, avoiding the possibility that a toxic dose is supplied at one area while a less than effective dose is applied to another area

20. A flexible, balloon-expandable stent having a longitudinal axis, consisting essentially of:

a. a plurality of flexible cells, each of said flexible cells consisting essentially of:

i. a first pair of members connected by an area of inflection defining a right-facing loop;

ii. a second pair of members connected by an area of inflection defining a left-facing loop that faces the right-facing loop;

iii. a first flexible link connecting the top of said first pair of members to the top of said second pair of members; and

iv. a second flexible link connecting the bottom of said first pair of members to the bottom of said second pair of members;

b. wherein said flexible cells are adapted so that said stent prior to expansion is bendable in substantially any direction without affecting the structural or functional integrity of said stent,

c. wherein said flexible cells are adapted so that upon the expansion of said stent by a balloon from a delivery diameter to a deployment diameter, said first and second

pairs of members shorten in a longitudinal direction and said flexible links lengthen in the longitudinal direction to compensate for said first and second pairs of members shortening in the longitudinal direction and for the tendency of said stent to foreshorten, and

d. wherein said flexible cells are further adapted to impart rigidity to said stent in an amount sufficient to support a lumen when said stent is expanded; and

e. wherein said right and left facing loops and said flexible links are disposed and adapted to cooperate so that the tube, when unexpended, can flex as it is moved through curved blood vessels to a site where it is to be expanded and so that, when the stent is expanded in a curved vessel, at that site, as compared to each other, cells on the outside of the curve are open in length, but narrow in width as compared to cells on the inside of the curve which are short in length but increased in width.

21. A stent according to claim 20, wherein on the outside of the curve, the curved flexible links open up and the loops close down, and on the inside of the curve, the flexible links close down and the loops open up.

22. A stent according to claim 20 wherein compensation, which occurs when cells on the outside of the curve open in length, but narrow in width and cells on the inside of the curve shorten in length but thicken in width, results in a more constant density of stent element area between the inside and the outside of the curve than would otherwise occur.

23. A stent according to claim 20 wherein compensation, which occurs when cells on the outside of the curve open in length, but narrow in width and cells on the inside of the curve shorten in length but thicken in width, results in a more constant stent cell area between the inside and the outside of the curve than would otherwise occur.

24. A stent according to claim 22 wherein said stent is coated with a medicine and said more constant density of stent elements results in a more even dose being applied to the inside wall of the lumen, avoiding the possibility that a toxic dose is supplied at one area while a less than effective dose is applied to another area.

25. A stent according to claim 23 wherein said stent is coated with a medicine and said more constant density of stent elements results in a more even dose being applied to the inside wall of the lumen, avoiding the possibility that a toxic dose is supplied at one area while a less than effective dose is applied to another area.

26. An expandable stent for supporting a vessel, wherein in the expanded and deployed state, the stent consists of:

a. first meander patterns having loops, the first meander patterns having axes extending circumferentially; and

b. second meander patterns having loops, the second meander patterns having axes extending horizontally,

c. wherein the first and second meander patterns are intertwined to form a tubular structure;

d. wherein the first meander patterns are connected to the second meander patterns so as to leave at least one loop of the second meander patterns between each pair of adjacent first meander patterns;

e. wherein the second meander patterns are connected to the first meander patterns so as to leave two loops of the first meander patterns between each pair of adjacent second meander patterns; and

f. wherein said first and second meander patterns are adapted to cooperate so that, when the expanded stent is in a curved vessel, on the outside of the curve, a circumferential shrinkage and horizontal growth of the loops in said first meander pattern substantially compensates for a horizontal growth and circumferential

compression of the loops in said second meander pattern and vice versa on the inside of the curve.

27. A stent according to claim 26, wherein on the outside of the curve, the loops in said second meander pattern open up and the loops in the first meander pattern close down, and on the inside of the curve, the loops in said second meander pattern close down and the loops in the first meander pattern open up.

28. A stent according to claim 26 wherein the compensation maintains a density of stent element area which is more constant on the inside and on the outside of the curve than it would without the compensation.

29. A stent according to claim 26 wherein the compensation maintains a stent area which is more constant on the inside and on the outside of the curve than it would without the compensation.

30. A stent according to claim 28 wherein said stent is coated with a medicine and said more constant density of stent elements results in a more even dose being applied to the inside wall of the lumen, avoiding the possibility that a toxic dose is supplied at one area while a less than effective dose is applied to another area

31. A stent according to claim 29 wherein said stent is coated with a medicine and said more constant density of stent elements results in a more even dose being applied to the inside wall of the lumen, avoiding the possibility that a toxic dose is supplied at one area while a less than effective dose is applied to another area

32. The stent according to claim 26, wherein the shape of the loops provides rigidity to the stent to enable the stent to maintain a blood vessel at a desired inner diameter.

33. The stent according to claim 26, wherein the stent defines a plurality of enclosed spaces, with each longitudinal end of the enclosed space being formed by loops of the first meander pattern.

34. The stent according to claim 33 wherein the enclosed spaces are substantially the same size.

35. A stent formed of a tube having a patterned shape consisting of:

a. even first meander patterns having axes extending [in a first direction] circumferentially;

b. odd first meander patterns having axes extending [in a first direction] circumferentially, wherein the odd first meander patterns are 180° out of phase with the even first meander patterns and occur between every two even first meander patterns;

c. second meander patterns having axes extending [in a second direction different from the first direction] horizontally, [and] the second meander patterns [are] intertwined with the even and odd first meander patterns to form a generally uniform distributed structure;

d. wherein the first and second meander patterns have loops,

e. wherein the even and odd first meander patterns are interconnected to leave a portion of the second meander pattern between adjacent even and odd first meander patterns,

f. wherein the portion of the second meander pattern between adjacent even and odd first meander patterns adapted to compensate for the tendency of the loops of the first meander to foreshorten when the stent is expanded ,

g. wherein the second meanders are interconnected to leave two loops of the first meander pattern between each pair of second meander pattern, and

h. wherein the portion of the second meander pattern between adjacent even and odd first meander patterns and loops of the first meander pattern are adapted to

cooperate so that, when the expanded stent is in a curved vessel, on the outside of the curve, a circumferential shrinkage and horizontal growth of the loops in said first meander pattern substantially compensates for a horizontal growth and circumferential compression of the portion of the second meander pattern between adjacent even and odd first meander patterns and vice versa on the inside of the curve.

36. A stent according to claim 35, wherein on the outside of the curve, the portion of the second meander pattern between adjacent even and odd first meander patterns includes at least one loop and the loops in said second meander pattern open up and the loops in the first meander pattern close down, and on the inside of the curve, the loops in said second meander pattern close down and the loops in the first meander pattern open up.

37. A stent according to claim 35 wherein the compensation maintains a density of stent element area which is more constant on the inside and on the outside of the curve than it would without the compensation.

38. A stent according to claim 35 wherein the compensation maintains a stent area which is more constant on the inside and on the outside of the curve than it would without the compensation.

39. A stent according to claim 37 wherein said stent is coated with a medicine and said more constant density of stent elements results in a more even dose being applied to the inside wall of the lumen, avoiding the possibility that a toxic dose is supplied at one area while a less than effective dose is applied to another area

40. A stent according to claim 38 wherein said stent is coated with a medicine and said more constant density of stent elements results in a more even dose being applied to the inside wall of

the lumen, avoiding the possibility that a toxic dose is supplied at one area while a less than effective dose is applied to another area

41. The stent according to claim 35, wherein changes in the shape of the loops provide rigidity to the stent upon expansion to enable the stent to maintain a blood vessel at a desired inner diameter.